

Anthrax

What is Anthrax?

Anthrax is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as *Bacillus anthracis*. Anthrax can be found naturally in soil and commonly affects domestic and wild animals around the world. Although it is rare in the United States, people can get sick with anthrax if they come in contact with infected animals or contaminated animal products. Contact with anthrax can cause severe illness in both humans and animals.

Anthrax is not contagious, which means you can't catch it like the cold or flu.

Where is Anthrax found?

Anthrax is most common in agricultural regions of Central and South America, sub-Saharan Africa, central and southwestern Asia, southern and eastern Europe, and the Caribbean.

Anthrax is rare in the United States, but sporadic outbreaks do occur in wild and domestic grazing animals such as cattle or deer. Anthrax is more common in developing countries and countries that do not have veterinary public health programs that routinely vaccinate animals against anthrax. In the United States, yearly vaccination of livestock is recommended in areas where animals have had anthrax in the past.

How do animals get infected with Anthrax?

Domestic and wild animals such as cattle, sheep, goats, antelope, and deer can become infected when they breathe in or ingest spores in contaminated soil, plants, or water. In areas where domestic animals have had anthrax in the past, routine vaccination can help prevent outbreaks.

How do people get infected with Anthrax?

People get infected with anthrax when spores get into the body. When anthrax spores get inside the body, they can be "activated." When they become active, the bacteria can multiply, spread out in the body, produce toxins (poisons), and cause severe illness.

This can happen when people breathe in spores, eat food or drink water that is contaminated with spores, or get spores in a cut or scrape in the skin. It is very uncommon for people in the United States to get infected with anthrax.

Certain activities can also increase a person's chances of getting infected.

What are the signs and symptoms of Anthrax?

The symptoms of anthrax depend on the type of infection and can take anywhere from 1 day to more than 2 months to appear. All types of anthrax have the potential, if untreated, to spread throughout the body and cause severe illness and even death.

Cutaneous anthrax symptoms can include:

- A group of small blisters or bumps that may itch
- Swelling can occur around the sore

- A painless skin sore (ulcer) with a black center that appears after the small blisters or bumps
 - Most often the sore will be on the face, neck, arms, or hands

Inhalation anthrax symptoms can include:

- Fever and chills
- Chest Discomfort
- Shortness of breath
- Confusion or dizziness
- Cough
- Nausea, vomiting, or stomach pains
- Headache
- Sweats (often drenching)
- Extreme tiredness
- Body aches

Gastrointestinal anthrax symptoms can include:

- Fever and chills
- Swelling of neck or neck glands
- Sore throat
- Painful swallowing
- Hoarseness
- Nausea and vomiting, especially bloody vomiting
- Diarrhea or bloody diarrhea
- Headache
- Flushing (red face) and red eyes
- Stomach pain
- Fainting
- Swelling of abdomen (stomach)

Injection anthrax symptoms can include:

- Fever and chills
- A group of small blisters or bumps that may itch, appearing where the drug was injected
- A painless skin sore with a black center that appears after the blisters or bumps
- Swelling around the sore
- Abscesses deep under the skin or in the muscle where the drug was injected

To Keep in Mind

Injection anthrax symptoms are similar to those of cutaneous anthrax, but injection anthrax can spread throughout the body faster and be harder to recognize and treat than cutaneous anthrax. Skin and injection site infections associated with injection drug use are common and do not necessarily mean the person has anthrax.

How do you prevent transmission of Anthrax?

Antibiotics:

Antibiotics can prevent anthrax from developing in people who have been exposed but have not developed symptoms. Ciprofloxacin and doxycycline are two of the antibiotics that could be used to prevent anthrax.

Each of these antibiotics offers the same protection against anthrax. Anthrax spores typically take 1 to 6 days to be activated, but some spores can remain inside the body and take up to 60 days or more before they are activated. Activated spores release toxins—or poisons—that attack the body, causing the person to become sick. That’s why people who have been exposed to anthrax must take antibiotics for 60 days. This will protect them from any anthrax spores in their body when the spores are activated.

Vaccines:

Anthrax Vaccine Adsorbed (AVA) protects against anthrax. It does **not** contain any anthrax bacteria and **cannot** give people anthrax. It is not typically available to the general public. The vaccine is approved by the Food and Drug Administration (FDA) for two different situations.

Routine Occupational Use (Before Possible Exposure):

Anthrax vaccine is approved for use in three groups of adults 18 to 65 years of age who may be at risk of coming in contact with anthrax because of their job. These at-risk adults will receive the vaccine before exposure:

- Certain laboratory workers who work with anthrax
- Some people who handle animals or animal products, such as some veterinarians
- Some members of the United States military

To build up protection against anthrax, these groups should get **5 shots** of anthrax vaccine over 18 months. To stay protected, they should get annual boosters. The shots are injected into a muscle (intramuscular).

People who should **not** get the anthrax vaccine for routine occupational use include:

- Pregnant women.
- Anyone who has had a serious allergic reaction to a previous dose of anthrax vaccine.
- Anyone who has a severe allergy to any component of the anthrax vaccine. Anyone with severe allergies, including allergy to latex, should tell their doctor.

For anyone with a moderate or severe illness, their doctor might ask them to wait until they recover to get the vaccine. People with mild illness can usually be vaccinated.

Post-Event Emergency Use (After Possible Exposure):

In November 2015, FDA also approved the vaccine for use **after** exposure to anthrax for people 18 through 65 years of age. In certain situations, such as a bioterrorist attack involving anthrax, anthrax vaccine might be recommended to prevent the disease in people after they have been exposed to the anthrax germs.